查询IXFH21N50供应商

IXYS

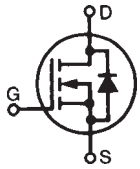
HiPerFET™ Power MOSFETs Q-Class

IXFH 21N50Q
IXFT 21N50Q

V_{DSS} = 500 V
I_{D25} = 21 A
$R_{DS(on)}$ = 0.25 Ω

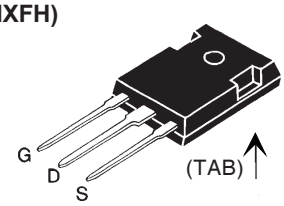
$t_{rr} \leq 250$ ns

N-Channel Enhancement Mode
Avalanche Rated, Low Q_g, High dv/dt

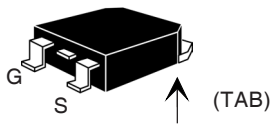


Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	T_J = 25°C to 150°C	500	V
V_{DGR}	T_J = 25°C to 150°C; R_{GS} = 1 MΩ	500	V
V_{GS}	Continuous	±30	V
V_{GSM}	Transient	±40	V
I_{D25}	T_C = 25°C	21	A
I_{DM}	T_C = 25°C, pulse width limited by T_{JM}	84	A
I_{AR}	T_C = 25°C	21	A
E_{AR}	T_C = 25°C	30	mJ
E_{AS}		1.5	mJ
dv/dt	$I_S \leq I_{DM}$, di/dt ≤ 100 A/µs, $V_{DD} \leq V_{DSS}$, $T_J \leq 150$°C, R_G = 2 Ω	15	V/ns
P_D	T_C = 25°C	280	W
T_J		-55 to +150	°C
T_{JM}		150	°C
T_{stg}		-55 to +150	°C
T_L	1.6 mm (0.063 in) from case for 10 s	300	°C
M_d	Mounting torque	1.13/10	Nm/lb.in.
Weight	TO-247	6	g
	TO-268	4	g

TO-247 AD (IXFH)



TO-268 (D3) (IXFT)



G = Gate D = Drain
S = Source TAB = Drain

Symbol	Test Conditions		Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
V_{DSS}	V_{GS} = 0 V, I_D = 250 µA		500			V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, I_D = 4 mA		2.5		4.5	V
I_{GSS}	V_{GS} = ±30 V_{DC}, V_{DS} = 0				±100	nA
I_{DSS}	$V_{DS} = V_{DSS}$	T_J = 25°C			25	µA
	V_{GS} = 0 V	T_J = 125°C			1	mA
$R_{DS(on)}$	V_{GS} = 10 V, $I_D = 0.5\ I_{D25}$ Pulse test, t ≤ 300 µs, duty cycle d ≤ 2 %				0.25	Ω

Features

- IXYS advanced low Q_g process
- Low gate charge and capacitances
  - easier to drive
  - faster switching
- International standard packages
- Low $R_{DS\ (on)}$
- Rated for unclamped Inductive load switching (UIS) rated
- Molding epoxies meet UL 94 V-0 flammability classification

Advantages

- Easy to mount
- Space savings
- High power density

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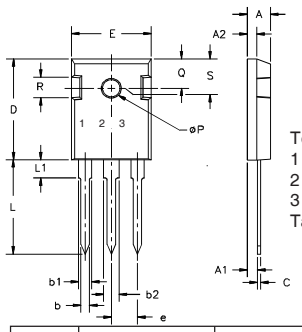
Symbol	Test Conditions	Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
g_{fs}	V_{DS} = 20 V; I_D = 0.5 • I_{D25}, pulse test	14	21		S
C_{iss}	V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz		3000		pF
C_{oss}			420		pF
C_{rss}			110		pF
$t_{d(on)}$	V_{GS} = 10 V, V_{DS} = 0.5 • V_{DSS}, I_D = 0.5 • I_{D25} R_G = 2.0 Ω (External),		25		ns
t_r			28		ns
$t_{d(off)}$			51		ns
t_f			12		ns
$Q_{g(on)}$	V_{GS} = 10 V, V_{DS} = 0.5 • V_{DSS}, I_D = 0.5 • I_{D25}		84		nC
Q_{gs}			20		nC
Q_{gd}			35		nC
R_{thJC}				0.45	K/W
R_{thCK}	(TO-247)		0.25		K/W

Source-Drain Diode

Symbol	Test Conditions	Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
I_S	V_{GS} = 0 V			21	A
I_{SM}	Repetitive; pulse width limited by T_{JM}			84	A
V_{SD}	$I_F = I_S$, V_{GS} = 0 V, Pulse test, t ≤ 300 µs, duty cycle d ≤ 2 %			1.3	V
t_{rr}	$I_F = I_S$, -di/dt = 100 A/µs, V_R = 100 V			250	ns
Q_{RM}			0.85		µC
I_{RM}			8		A

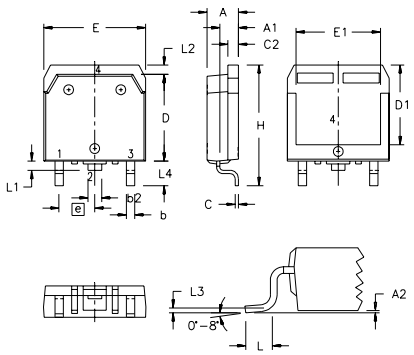
TO-247 AD (IXFH) Outline



Terminals:
1 - Gate
2 - Drain
3 - Source
Tab - Drain

Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	4.7	5.3	.185	.209
A_1	2.2	2.54	.087	.102
A_2	2.2	2.6	.059	.098
b	1.0	1.4	.040	.055
b_1	1.65	2.13	.065	.084
b_2	2.87	3.12	.113	.123
C	.4	.8	.016	.031
D	20.80	21.46	.819	.845
E	15.75	16.26	.610	.640
e	5.20	5.72	0.205	0.225
L	19.81	20.32	.780	.800
L1		4.50		.177
ØP	3.55	3.65	.140	.144
Q	5.89	6.40	0.232	0.252
R	4.32	5.49	.170	.216
S	6.15 BSC		242 BSC	

TO-268 Outline



Terminals: 1 - Gate 2 - Drain
3 - Source Tab - Drain

SYM	INCHES MIN	MAX	MILLIMETERS MIN	MAX
A	.193	.201	4.90	5.10
A1	.106	.114	2.70	2.90
A2	.001	.010	0.02	0.25
b	.045	.057	1.15	1.45
b2	.075	.083	1.90	2.10
C	.016	.026	0.40	0.65
C2	.057	.063	1.45	1.60
D	.543	.551	13.80	14.00
D1	.488	.500	12.40	12.70
E	.624	.632	15.85	16.05
E1	.524	.535	13.30	13.60
e	.215 BSC		5.45 BSC	
H	.736	.752	18.70	19.10
L	.094	.106	2.40	2.70
L1	.047	.055	1.20	1.40
L2	.039	.045	1.00	1.15
L3	.010 BSC		0.25 BSC	
L4	.150	.161	3.80	4.10

IXYS reserves the right to change limits, test conditions, and dimensions.

IXYS MOSFETs and IGBTs are covered by one or more of the following U.S. patents: 4,850,072 4,835,592 4,931,844 4,881,106 5,034,796 5,017,508 5,063,307 5,049,961 5,237,481 5,187,117 5,381,025 5,486,715 6,404,065B1 6,306,728B1 6,162,665 6,259,123B1 6,534,343 6,306,728B1 6,583,505 6,683,344

Fig. 1. Output Characteristics @ 25ºC

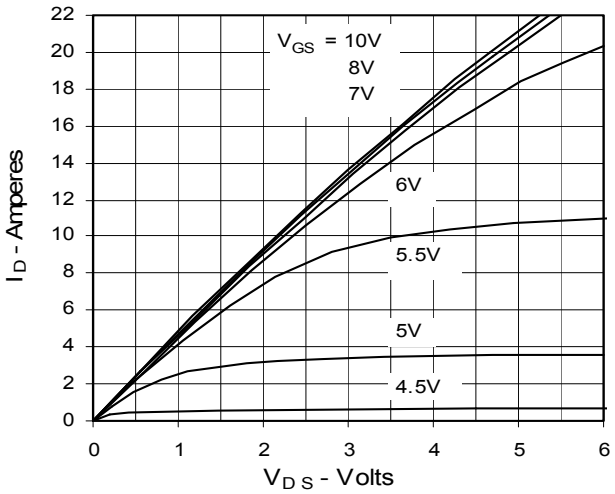


Fig. 2. Extended Output Characteristics @ 25ºC

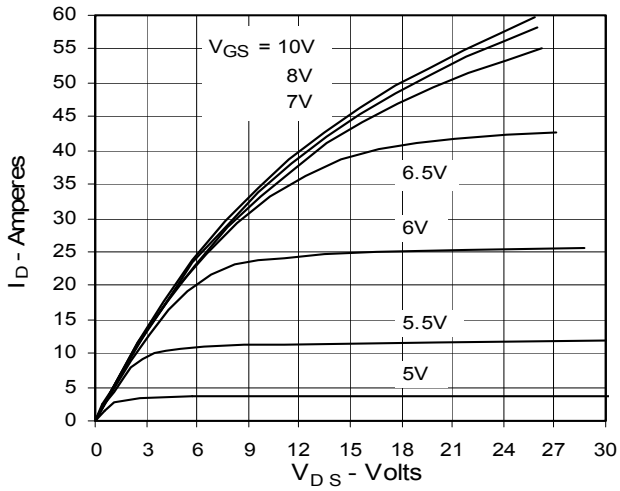


Fig. 3. Output Characteristics @ 125ºC

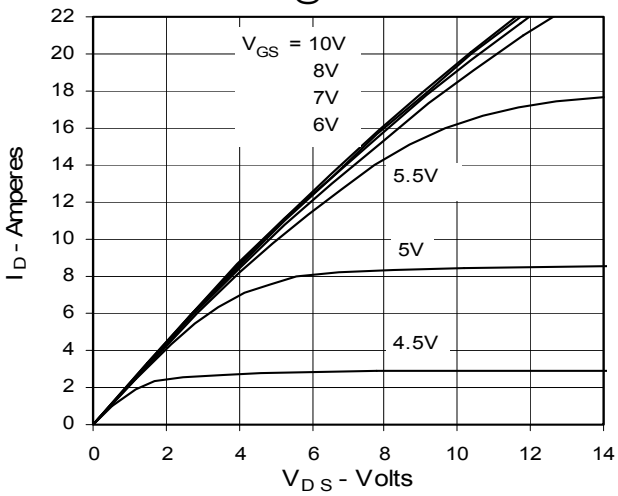


Fig. 4. $R_{DS(on)}$ Normalized to 0.5 I_{D25} Value vs. Junction Temperature

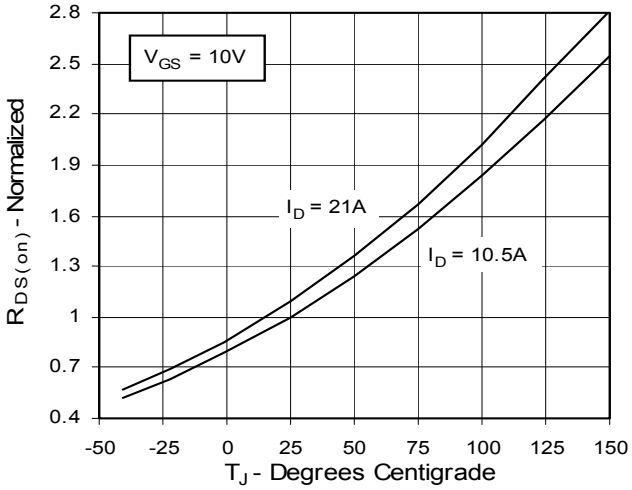


Fig. 5. $R_{DS(on)}$ Normalized to 0.5 I_{D25} Value vs. I_D

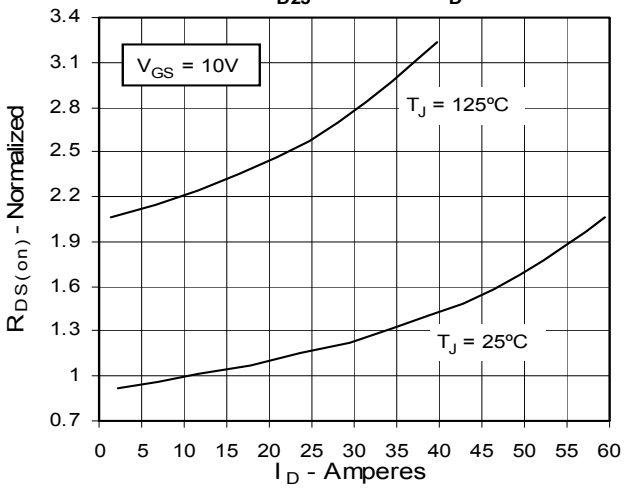


Fig. 6. Drain Current vs. Case Temperature

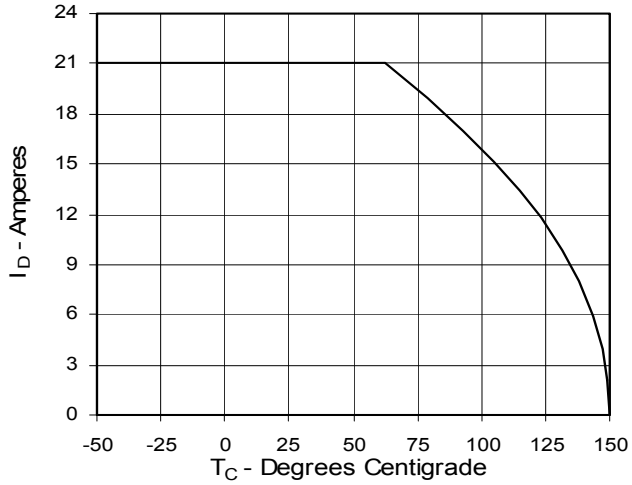


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Fig. 7. Input Admittance

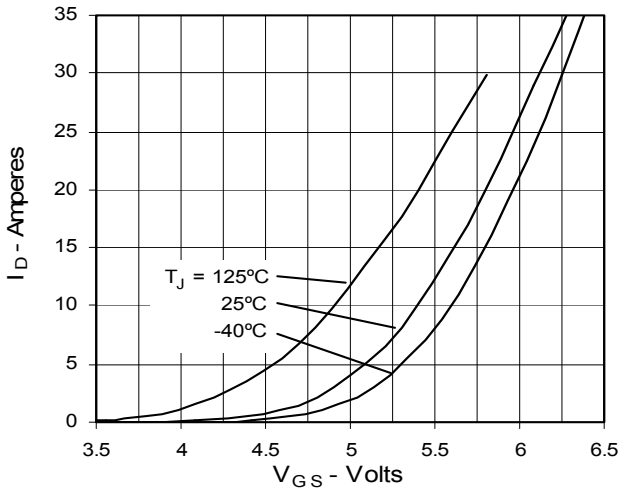


Fig. 8. Transconductance

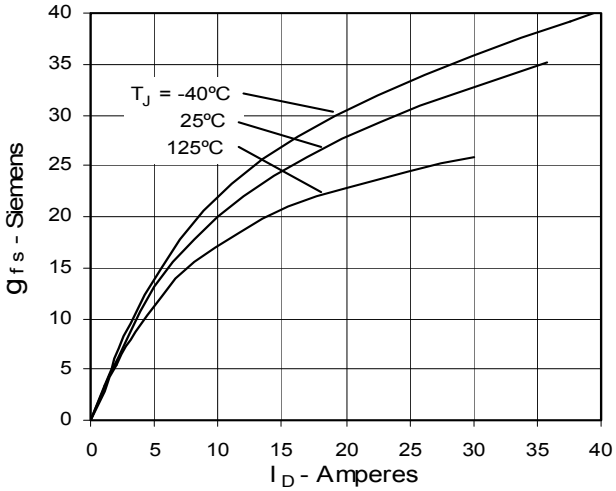


Fig. 9. Source Current vs. Source-To-Drain Voltage

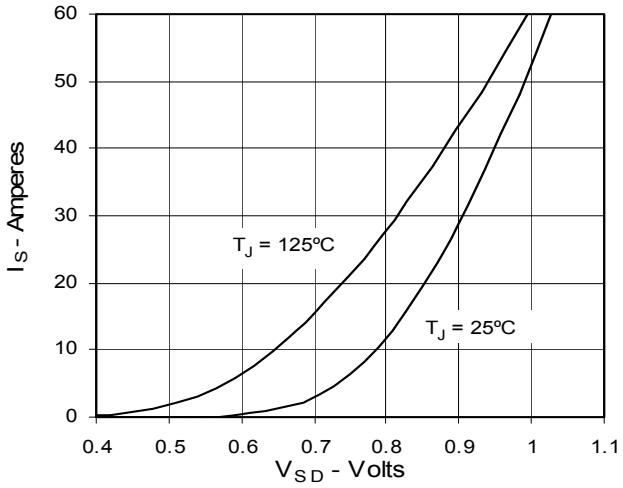


Fig. 10. Gate Charge

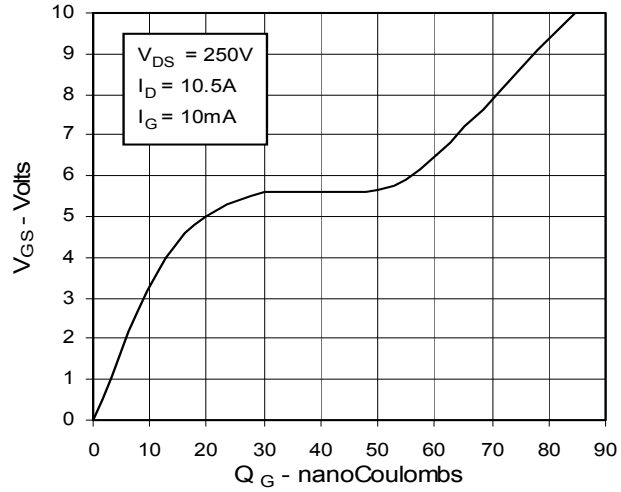


Fig. 11. Capacitance

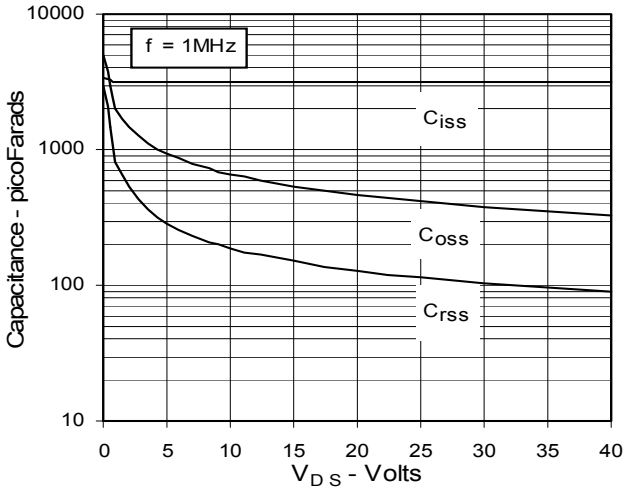
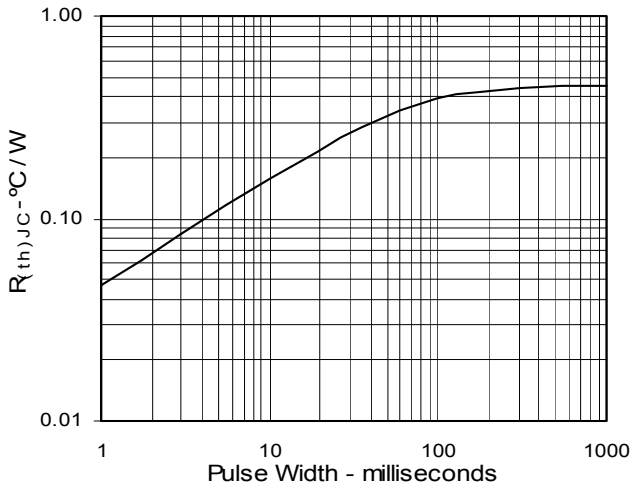


Fig. 12. Maximum Transient Thermal Resistance



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